

INNOVATION in Windscreen Materials

First Use of Lexan® Polycarbonate

In 1975, National Cycle was the **first company in the world** to introduce and use GE's Lexan® FMR hardcoated polycarbonate material for motorcycle windshields. Polycarbonate advanced the design and durability of motorcycle windshields, and the first modern styled, optically clear, polycarbonate windshield was made by our company. We called it the **Heavy Duty™**.

What are the Benefits of Polycarbonate?

Outstanding impact strength! No other thermoplastic comes close to matching the impact strength of polycarbonate, making it the ideal material for motorcycle windshields. It is **20X more impact resistant** than acrylic plastic (Lucite®). You can check the data from the Free Falling Steel Dart Test and the IZOD Notch Test but **real world testimonials**, like the one from a customer who met a ball peen hammer at 75MPH attest to the outstanding impact strength of polycarbonate. So whether it is birds, bugs, stones or hammers, for the serious rider, a strong windshield is very important.

Why Hardcoat Windshields?

Many riders agree that strength is an important benefit, but ask, **"What affects the transparency of a windshield?"** However tough polycarbonate is, it's routinely subjected to surface deterioration from abrasion. **Polycarbonate must be hardcoated to be optically clear enough for use as a motorcycle windshield.**

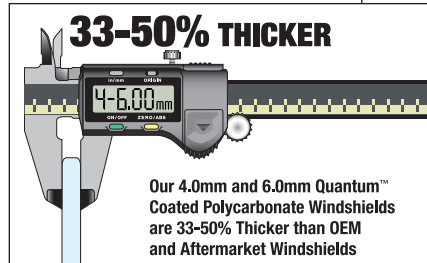
Introducing Quantum®: the New High Standard

FMR is a good polycarbonate hardcoating and was the industry standard until National Cycle made a "quantum" improvement in the surface characteristics of motorcycle windshields exposed to years of use and wear.

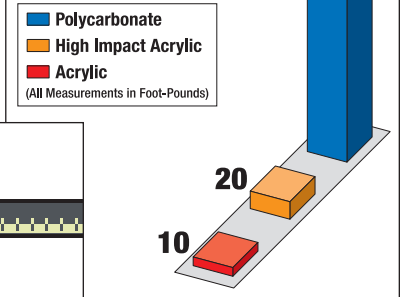


We start with a polycarbonate sheet, but it is our **exclusive Quantum® hardcoating** that has **defined the new state-of-the-art standard** in windshield scratch resistance and optical clarity.

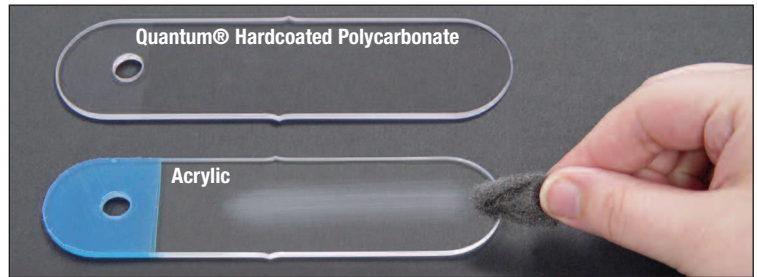
POLYCARBONATE STRENGTH



Polycarbonate Strength Impact Resistance



We applied a ball peen hammer at full force to one of our polycarbonate screens (left) and to a competitor's acrylic screen (right). We're professionals – don't try this at home!



We use a steel wool scratch test to demonstrate the abrasion resistance of Quantum® hardcoated polycarbonate (top) against acrylic (bottom).

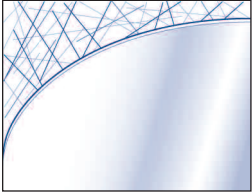
Polycarbonate vs. Acrylic... YOU Decide!



Watch our video, "Polycarbonate vs. Acrylic: YOU Decide!", and see how our hardcoated polycarbonate windshields withstand the kind of abuse that reduces typical acrylic windshields to little pieces!

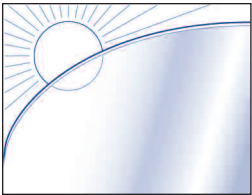
A QUANTUM Leap Forward

What Makes Quantum® Hardcoated Windscreens Better Than All the Others?



Superior Scratch Resistance

30X more scratch resistance than typical acrylic wind-screens is saying a lot! Think of it as 30X more miles per wind-screen. FMR hardcoated polycarbonate is a big improvement over acrylic, yet Quantum has **10X better** scratch resistance than FMR. That's the kind of performance and strength you need from a motorcycle windshield!



Glare-Free Optics

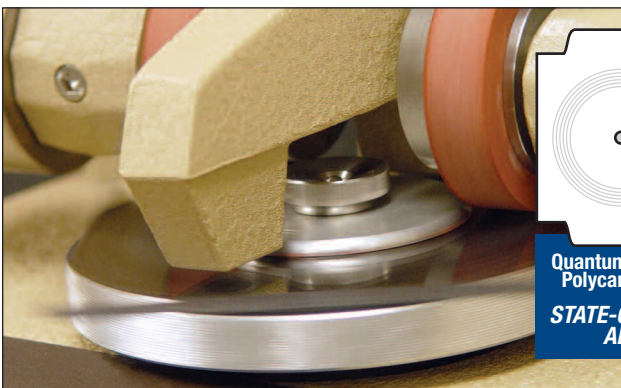
Think about riding into the sun or at night and not having to look through the glare of fine scratches that eventually show up on your screen. **Quantum coating gives your windscreen much better optical definition and clarity**, and your windscreen will stay that way a lot longer.



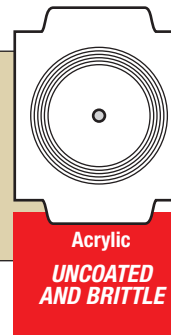
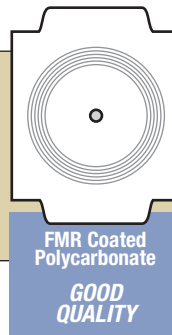
Award-winning Quantum hardcoating is used in many tough applications. Our Quantum hardcoated polycarbonate has withstood over one million windshield wipes on the windscreen of the fully enclosed Benelli Adiva scooter.



Here we see a motorcycle windscreen with typical surface wear and abrasions. This is **NOT** what you want in front of you when facing oncoming traffic!



Scientific laboratory monitoring and measurement instruments test the surface wear on both hardcoated and uncoated windscreen materials.



National Cycle's Quantum hardcoating technology was awarded Honda's prestigious **INNOVATION Award**.

